MATERIAL SAFETY DATA SHEET

DPM 149

Acetylene

April 1986

LIQUID CARBONIC
INDUSTRIAL/MEDICAL CORPORATION
135 SOUTH LA SALLE STREET • CHICAGO, ILLINOIS 60603-4282
PHONE: (312) 855-2500

Emergency Phone Numbers: (312) 855-2500; CHEMTREC (800) 424-9300

SECTION I--PRODUCT IDENTIFICATION

CHEMICAL NAME: Acetylene
COMMON NAME AND SYNONYMS: Acetylene, Ethyne, Ethine
CHEMICAL FAMILY: Alkynes FORMULA: C_2H_2

SECTION II--HAZARDOUS INGREDIENTS

MATERIAL	VOLUME %	CAS NO.	1985-6 ACGIH TLV UNITS
Acetylene	100%	74-86-2	Simple asphyxiant-No TLV

SECTION III--PHYSICAL DATA

BOILING POINT (°F.)	-112°F	SPECIFIC GRAVITY (H_2O=1)	0.613 @ B. P.
VAPOR PRESSURE (mmHg.)	@ -112°F 760	% VOLATILE BY VOLUME	100%
VAPOR DENSITY (AIR=1)	32°F 0.907	EVAPORATION RATE (BUTYL ACETATE=1)	Rapid
SOLUBILITY IN WATER	Slight		
APPEARANCE AND ODOR	Colorless with garlic like odor		

SECTION IV--FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED) -18°C (C.C.)
FLAMMABLE LIMITS % BY VOLUME IN AIR LEL 2.5 UEL 81
EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, Halon, water

SPECIAL FIRE FIGHTING PROCEDURES: Stop gas flow and fight fire conventionally. Fire fighters should be cognizant of extreme fire and explosion hazards and fight fire from safe distance. Keep containers cool with water spray. Use self contained breathing apparatus. Fires which have been extinguished without stopping flow of gas can easily re-ignite or explode.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Acetylene decomposes above 15 psig pressure if undissolved in acetone. Cylinder safety fuse melts at 212°F and will release gas. Acetylene can decompose violently when heated or shocked. Ref: CGA bulletin SB-4 "Handling Acetylene Cylinders in Fire Situations."

SECTION V--HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: No TLV Established - Workplace air must have over 18% O_2 by volume at atmospheric pressure.
EFFECTS OF OVEREXPOSURE: Headaches, dizziness, shortness of breath, unconsciousness, death. Symptoms of anoxia only occur when gas is in flammable range and has not ignited.
EMERGENCY AND FIRST AID PROCEDURES: Remove to fresh air. Do not enter areas within the flammability range (over 2.5%) because of immediate fire and explosion hazard. Use an explosimeter for acetylene to measure concentration in air. Stop gas supply if possible and keep containers cool with water spray. Gas has an anesthetic action. Pure Acetylene can be inhaled in high concentrations without chronic harmful affects. Acetylene is a simple asphyxiant which can displace oxygen in the air to asphyxiating levels. If inhaled give oxygen, or if unconscious give artificial respiration. Obtain prompt medical assistance. Keep warm and at rest.
ROUTE(S) OF ENTRY: INHALATION? Yes SKIN? INGESTION?
CARCINOGENICITY: NTP? No IARC MONOGRAPHS? No OSHA? No

Form ST-03429

SECTION VI--REACTIVITY DATA

STABILITY: UNSTABLE (X) STABLE ( )
CONDITIONS TO AVOID: Undissolved gas dissociates above 15 psig. Can decompose violently when heated or shocked without oxygen or air.
INCOMPATABILITY (MATERIALS TO AVOID): Oxidizers, halogens, copper, silver, mercury
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon and hydrogen
HAZARDOUS POLYMERIZATION: MAY OCCUR ( ) WON'T OCCUR (X)
CONDITIONS TO AVOID: N/A

SECTION VII--SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Evacuate all personnel from affected area. Use appropriate protective equipment. Eliminate ignition sources. Shut off flow of gas if possible. Provide maximum explosion proof ventiliation.

WASTE DISPOSAL METHOD: Move cylinders to a remote outdoor area. Burn off gas or allow to slowly diffuse into atmosphere. Follow Federal, state, or local disposal regulations.

SECTION VIII--SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Self-contained breathing apparatus

VENTILATION: LOCAL EXHAUST (X) Provide local ventilation to keep acetylene concentration in air below 2500 ppm.
MECHANICAL (GENERAL) (X) Forced ventilation to prevent acetylene concentration from reaching up to flammable range.
PROTECTIVE GLOVES: Leather EYE PROTECTION: Safety goggles
OTHER PROTECTIVE EQUIPMENT: Safety shoes, acetylene monitor and alarm

SECTION IX--SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect cylinders from physical damage. Store in cool, dry, and well ventilated area. Electrical equipment should be explosion proof and non-sparking. All lines and equipment should be electrically grounded. Post "No Smoking or Open Flame" signs in storage and use areas. Store away from oxidizer and corrosive gases. Store cylinders in upright position, secured to prevent falling over. There should be no sources of ignition in storage or use area. Use a check valve or trap in cylinder discharge to prevent hazardous back-flow.

OTHER PRECAUTIONS: To avoid hazardous acetylene dissociation, do not allow the free gas to exceed 15 psig pressure @ 70°F. Follow withdrawal rate maximum so that solvent is not withdrawn with gas. Use only DOT or ASME coded containers. Container must not be recharged except by or with consent of Liquid Carbonic. Reference CGA Bulletins SB-2 "Oxygen Deficient Atmospheres," SB-4 "Handling Acetylene Cylinders in Fire Situations"; CGA Pamphlets G-1 "Acetylene" and P-1 "Safe Handling of Compressed Gases in Containers."